



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,512	04/19/2004	Hun-Jung Yi	8836-242 (IH13145-US)	3483
22150	7590	12/16/2008		
F. CHAU & ASSOCIATES, LLC				
130 WOODBURY ROAD				
WOODBURY, NY 11797				
EXAMINER				
PATEL, RITA RAMESH				
ART UNIT		PAPER NUMBER		
1792				
MAIL DATE		DELIVERY MODE		
12/16/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/827,512

Applicant(s)

YI ET AL.

Examiner

RITA R. PATEL

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Applicant's Remarks

This Office Action is responsive to the amendment filed on 10/24/08. Claims 8-31 are pending. Claims 1-7 have been canceled. Claims 8, 18, and 20 have been amended. Claims 27-31 are new.

Applicant's arguments have been fully considered, but are not persuasive. Thus, claims 8-31 are finally rejected for the reasons of record.

Applicant's arguments are directed to the reference Kamikawa et al. herein referred to as "Kamikawa" (US Patent No. 6,299,696), applicant contests that Kamikawa fails to teach or make obvious the teaching of the shutter/separation plate 7 having an exhaust path formed therethrough. However, shutters are mechanical devices that limit a passageway by having apertures. Thus, Kamikawa briefly teaches use of an exhaust path formed through its shutter separation plate 7, however, Kamikawa fails to go into detail regarding the openings formed on the shutter separation plate. However, Dexter et al. herein referred to as "Dexter" (US Patent No. 5,524,361) teaches a known method of drying wafers using varying holes and quantity of holes to result in uniform air distribution and drying of wafers (col. 5, lines 42-53; col. 6, lines 29-48; Figure 5, items 40, 40', 40"). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the known drying techniques described specifically by Dexter in the invention of Kamikawa for even drying, as motivated by Kamikawa's use of performing drying functions using drying gases and a shutter separation plate 7. Obviously,

Kamikawa teaches drying wafers as a known feature and performing an even distribution of drying on the wafers achieves less defects or damage to the wafers and thus is beneficial.

Claim Objections

Claim objections over claims 8 and 13 have been withdrawn due to further consideration of the claims.

Claim Rejections - 35 USC § 112

Claim rejections over claims 8-26 under 35 U.S.C. 112, second paragraph, have been withdrawn due to Applicant's amendments to claims 8, 18, and 20, and due to further consideration of the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-11, 13-22, and 24-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamikawa et al. herein referred to as "Kamikawa" (US Patent No. 6,299,696) and further in view of Dexter et al. herein referred to as "Dexter" (US Patent No. 5,524,361).

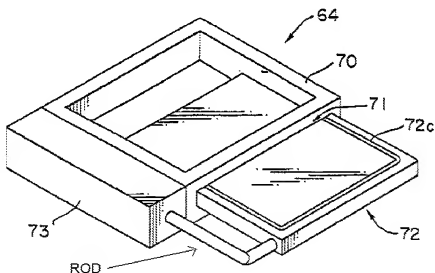
Kamikawa teaches an apparatus for cleaning semiconductor substrates (col. 1 lines 4-21) in a row and the row direction is vertical to the processing surfaces of the substrates (Fig. 2 and 3) comprising: a chamber having a cleaning room (4) in which the semiconductor substrates are cleaned and a drying room (2) disposed over the cleaning room, in which the semiconductor substrates are dried (Fig. 2); a supporter disposed in the chamber that supports the semiconductor substrates (6) (col. 5 lines 10-67); a supply pipe installed in the drying room that supplies a drying fluid onto the substrate (Fig. 2 ozone gas, IPA and water vapor, hot air, hot nitrogen gas); a separation plate (7) which is movable to separate the cleaning room and the drying room or the place the cleaning room and the drying room in communication with one another (col. 5 lines 10-67). Kamikawa teaches a shutter (or separation plate) (50) with an exhaust path (56) located between a semiconductor cleaning chamber (3) and drying chamber (140) (Fig. 4, col. 6 lines 45-67). Shutters are mechanical devices that limit a passageway by having apertures. Thus, Kamikawa briefly teaches use of an exhaust path formed through its shutter separation plate 7, however, Kamikawa fails to go into detail regarding the openings formed on the shutter separation plate. However, the Dexter reference teaches that varying the location and quantity of holes results in uniform air distribution and drying of wafers (col. 5 lines 42-53, col. 6 lines 29-48, Fig. 5 items 40, 40', 40"). Without evidence of unexpected results, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the known technique of varying the location and quantity of holes in a plate in order to result in uniform air distribution and drying of a product within an apparatus as taught by Dexter within the apparatus

taught by Kamikawa. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the known drying techniques described specifically by Dexter in the invention of Kamikawa for even drying, as motivated by Kamikawa's use of a shutter separation plate 7. Obviously, Kamikawa teaches drying wafers as a known features and performing and even distribution of drying wafers achieves less defects or damage to the wafers and thus is beneficial.

Kamikawa and Dexter teach a cleaning solution supply pipe (DI water) disposed in the cleaning room. The cleaning room comprises an inner bath with a supporter (col. 5 lines 10-34) and an outer bath (32) surrounding the upper outer periphery of the inner bath with a drain on one side of the bottom of the outer bath (35) (col. 6 lines 1-8). The functional recitation "the drying fluid flowing into the cleaning room along the exhaust path of the separation plate (36) is exhausted to the outside through the exhaust port (29)" has not been given patentable weight because it is intended use. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Claims 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamikawa and Dexter as applied to claims above, and further in view of Kamikawa et al. herein referred to as "Kamikawa '718") (Pub. US 2003/0159718).

Kamikawa and Dexter suggest the apparatus of claim 9, but does not teach that the separation plate comprise a connecting rod. Kamikawa '718 teaches the separation plate having a connecting rod connected to the separation plate and to a driving part for horizontally moving the connecting rod (p. 6 paragraph 122, Fig. 10, See Fig. below). Without evidence of unexpected results it would have been obvious to one of ordinary skill in the art at the time of the invention to have a rod connecting the separation plate and driving part for horizontally moving the connecting rod with the apparatus as suggested in Kamikawa and Dexter since use of a known technique a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art.



Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RITA R. PATEL whose telephone number is (571)272-8701. The examiner can normally be reached on M-F: 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/
Supervisory Patent Examiner, Art
Unit 1792

/Rita R. Patel/
Examiner, Art Unit 1792